EBIO 324 (Conservation Biology Lab) Overview:

Conservation Biology is a "mission driven," interdisciplinary field that has emerged in response to anthropogenic impacts on biodiversity. Conservation efforts have previously focused on protecting large, contiguous area outside metropolitan areas; however, a new, burgeoning movement is focusing more heavily on urban habitats.

The Houston area was historically a part of a vast ecosystem known as the coastal prairie; however today, less than 1% of this ancient ecosystem remains. Attempts to protect contiguous pieces of prairie habitat in Harris County have been thwarted by the rapid pace of development and unfavorable city and state politics. In an attempt to raise greater awareness about the plight of this vanishing ecosystem, several groups are focusing on building smaller, urban "pocket prairies" inside the city at schools, parks, and other public spaces. In addition to the exposure that these sites are giving city dwellers about prairies, pocket prairies may also play a role in flood water detention, improving air and water quality, and the support of urban biodiversity.

University and college campuses are playing an increasingly important role in urban conservation. College grounds not only provide protected space for urban conservation projects, but just as importantly, they are function as outdoor classrooms and environmental labs for students. Rice University's Harris Gully Natural Area (HGNA) is the perfect site for an urban, conservation project. The HGNA currently supports a decent number of native plants species and as a designated retention basin it will not be developed in the foreseeable future. With additional work, including the introduction of more native plants and the removal of invasive species, the site could be transformed into a high quality pocket prairie.

Over the past two academic years, EBIO 324 has compared the plant biodiversity at HGNA with two, nearby pocket prairie sites: the Whistlestop Prairie in Hermann Park and the MD Anderson Prairie in the Texas Medical Center. Using this data, the Spring 2018 EBIO 324 class will be challenged to design and carry out a restoration project for the HGNA. Additionally, the students will be responsible for developing a long-term, management plan based on information they are able to collect from the managers of other pocket prairie sites.

There are two, principle goals for the EBIO 324 course in Spring 2018:

- **Goal 1:** Provide students an authentic opportunity to use ecological and other scientific data to make conservation-based decisions.
- **Goal 2:** Provide students an opportunity to work as a group to plan, organize, and carry out a conservation project that will positively impact both Rice and the greater Houston community.

Establishing a pocket prairie on campus would be tremendously beneficial to the university. It could serve as an outdoor lab for numerous courses, provide a natural

space for relaxation and reflection, as well as provide invaluable habitat for urban species, including migratory birds and pollinators. A pocket prairie at HGNA will also serve as an important reminder to the Houston community about the ancient ecosystem that supported the origins of our city.

Learning outcomes for EBIO324 Spring 2018:

- Students will be able to identify and critically evaluate environmental and conservation issues impacting the greater Houston area; specifically challenges related to the threatened coastal prairie ecosystem.
- Students will apply ecological research methods to collect and analyze biodiversity data.
- Students will be able to integrate and transform ecological data into real-world, restoration practice.
- Students will effectively communicate about the project to the university community, as well as external groups and community partners.
- Students will design, plan, and orchestrate an event that will involve the campus community and outside organizations including local non-profits, agencies, and conservation groups that have expertise in prairie restoration and urban conservation projects.

Deliverables for EBIO324 Spring 2018:

- A comprehensive native plant list and a planting map based on topography and soil data will be compiled for the HGNA.
- A 3-5 year management plan for the HGNA will be developed for the restoration efforts. This plan will include a timeline for additional plantings and the general maintenance of the site (i.e., mowing, herbicide treatment, tallow tree removal).
- The students will organize and host the first HGNA planting workday in April of 2018. This workday will include the campus community as well as outside organizations familiar with prairie restoration (including the Katy Prairie Conservancy, the Native Prairie Association of Texas, the Native Plant Society of Texas, Houston Parks and Recreation Department, Houston Audubon).
- Educational media will be developed that will communicate the purpose and benefits of the HGNA restoration to the Rice community. This may include interpretive signs, communication pieces (social media, news articles, etc.) and other methods that will raise awareness with faculty, students, and student organizations that may directly benefit from an on-campus restoration project.